

## ABSTRACT

A gas flux measuring device measures a region, such as a forest, as a measuring object with no influence by concomitants and with high responsiveness and excellent measuring stability. The device includes a laser beam source, laser output controller, wavelength modulation controller, first light receiver, first direct current component detector, first wavelength modulation demodulator, optical system, reference cell, second light receiver, second direct current component detector, second wavelength modulation demodulator, third wavelength modulation demodulator, analyzer, adder, temperature measurement and pressure measurement. A flow velocity measuring device directly measures horizontal 2-directional flow velocity components and a vertical directional flow velocity component of a gas flow in the measuring region and puts out these measurement signals into the analyzer. Based on the signals inputted from the flow velocity measuring device, the analyzer makes an analysis based on the eddy correlation method and obtains, by calculation using this analysis result, a momentum flux and concentration of the measuring object gas.